

REEL # 26  
PROTSENKO, M.I.

UNCLASSIFIED

PROCESSING DATE--23OCT70

2/2 028

CIRC ACCESSION NO--AP0120627

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. L FIBROBLASTS WERE IRRADIATED WITH X RAYS (200 AND 400 RAD) AND AFTERWARDS CULTURED IN VITRO. UV AND VISIBLE BLUE FLUORESCENCES OF CELLS WERE MEASURED. A RAPID INCREASE OF BOTH TYPES OF FLUORESCENCE WAS FOUND REACHING ITS PEAK BY THE 3RD DAY; ON DAYS 15 TO 20 THIS LEVEL DECREASED TO THE ONES OF THE CONTROL VALUES.

FACILITY: MEDICAL INST., NOVOSIBIRSK, USSR.

UNCLASSIFIED

UDC: 539.3:534.231.1

USSR

PROTSSENKO, O. P., Kiev

"Nonstationary Oscillations of a Long, Supported Cylinder Whose Thickness Is Variable With Time"

Kiev, Prikladnaya Mekhanika, Vol 6, No 11, 1970, pp 41-47

Abstract: The elastic displacements are determined for a system consisting of a long, thick cylinder whose thickness decreases with time and a thin shell which supports it. The system is subjected to the combined influence of a pressure applied to the internal surface of the cylinder which increases rapidly with time and a constant, even pressure applied to the external surface of the shell. Due to the decreasing thickness of the cylinder, the mass and rigidity of the system change continually. The influence of this factor on the behavior of the system is studied for the case when the material of the cylinder belongs to the class of materials characterized by high modulus of hydrostatic compression.

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Acc. Nr

AP0034110

Abstracting Service:  
CHEMICAL ABST. 4-7c

Ref. Code  
2R 0078

74168u Praseodymium nitrite, its preparation and properties.  
Protsenko, P. I.; Iyeva, T. I.; Protsenko, G. P. (Rostov Gos.  
Univ., Rostov, USSR). Zh. Neorg. Khim. 1970, 15(1), 9-12  
(Russ).  $\text{Pr}(\text{NO}_2)_3 \cdot 5\text{H}_2\text{O}$  (I), m.  $67^\circ$  with partial decolpn., ob-  
tained by reaction of Pr sulfate with  $\text{Ba}(\text{NO}_3)_2$ , crystallizes as  
rhombic or monoclinic crystals, depending on the conditions of  
crystn. At  $20^\circ$ , the d. of I is  $1.382 \text{ g/cm}^3$ ;  $n_D$  and  $n_H$  are  $1.550$   
 $\pm 0.002$  and  $1.534 \pm 0.002$ , resp. On heating, I decomp. to  
bright green  $\text{Pr}(\text{OH})(\text{NO}_2)_2$  at  $115^\circ$ , yellowish green  $\text{PrONO}_2$   
at  $329^\circ$ , and black-brown  $\text{PrO}_2$  at  $436^\circ$ . DTA and ir spectra  
prove that a part of  $\text{H}_2\text{O}$  of I is  $\text{H}_2\text{O}$  of crystn. and a part is co-  
ordinated to the Pr ion via O. Structures are proposed.

HMJR J

REEL/FRAME

19710753

18

de

USSR

UDC: 539.384/.5

PROTSENKO V.S. and SINEKOP, N.S., Khar'Kov

"Nonclassical Analysis of Infinite Beam on Elastic Foundation"

Kiev, Prikladnaya Mekhanika, Vol 9, Vyp 2, Feb 73, pp 91-94

Abstract: This is the continuation of the article by the same author in vyp 6, 1972 of this journal. Analysis is made of a band stamp of given width and infinite length pressed against a semi-infinite elastic space. The analysis begins with a relation between the deflection and the contact pressure. The distribution of contact pressure along the width of the band is established. Particular cases of this distribution are shown on graphs. The deflections and contact pressures along the axis of the band are also given, a graph of two particular cases is presented.

1/1

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1/2 015 UNCLASSIFIED PROCESSING DATE--11DEC70  
TITLE--CI. A FORMATION METHOD OF AN APPROXIMATE SOLUTION FOR A MIXED  
AXISYMMETRIC PROBLEM OF THE THEORY OF ELASTICITY -U-  
AUTHOR--(02)--PROISENKO, V.S., RVACHEV, V.L.  
COUNTRY OF INFO--USSR  
SOURCE--MOSCOW, PRIKLADNAYA MATEMATIKA I MEKhanika, NO 2, 70, PP 360-365  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATHEMATICAL SCIENCES  
TOPIC TAGS--ELASTICITY THEORY, APPROXIMATE SOLUTION, DIFFERENTIAL EQUATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605041/C04 STEP NO--UR/0040/70/000/002/0360/0365  
CIRC ACCESSION NO--AP0142726  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--11DEC70

2/2 019

CIRC ACCESSION NO--AP0142726  
ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. GENERAL CONSIDERATIONS CONCERNING THE FORMATION OF AN APPROXIMATE SOLUTION OF MIXED SPATIAL PROBLEMS IN THE THEORY OF ELASTICITY ARE PRESENTED ON THE BASIS OF AN EXAMPLE OF AN AXISYMMETRIC CASE. A SYSTEM IS SUGGESTED FOR THE SOLUTION OF THE PROBLEM BY USE OF WHICH MIXED BOUNDARY CONDITIONS OF A CERTAIN TYPE MAY BE SATISFIED. THE SYSTEM ALSO CONTAINS A SERIES OF ARBITRARY FUNCTIONS FROM WHICH THOSE FUNCTIONS WHICH THE BEST SATISFY A SYSTEM OF DIFFERENTIAL EQUATIONS OF THE EQUILIBRIUM OF AN ELASTIC BODY CAN BE SELECTED. SINCE THE INVESTIGATIONS ARE BASED ON THE UTILIZATION OF R FUNCTIONS, THEY MAY BE USEFUL IN DISCUSSING PROBLEMS FOR ANY THREE DIMENSIONAL BODY. A FINAL NOTE DEMONSTRATES THE POSSIBILITY TO SIMPLIFY AN APPROXIMATE SOLUTION BY INCLUDING CERTAIN ESSENTIAL FEATURES OF THE EXACT SOLUTION.

UNCLASSIFIED

AA0052677

PROTSENKO V.V.

UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 1-70

241301 TRENCH FILLER has a working member comprising a frame 1 with closed scraping chain 3 placed in a vertical plane. It is distinguished by mounting, in the horizontal plane additional closed scraping chain 2 to, This achieves preloosening of the soil.

12.2.66. as 1055097/29-16, FOLTATEEV, I.S. et al.  
Kiev Binding Inst. (15.8.69) Bul. 13/1.4.69  
Class 84d, Int. Cl. E 02f.

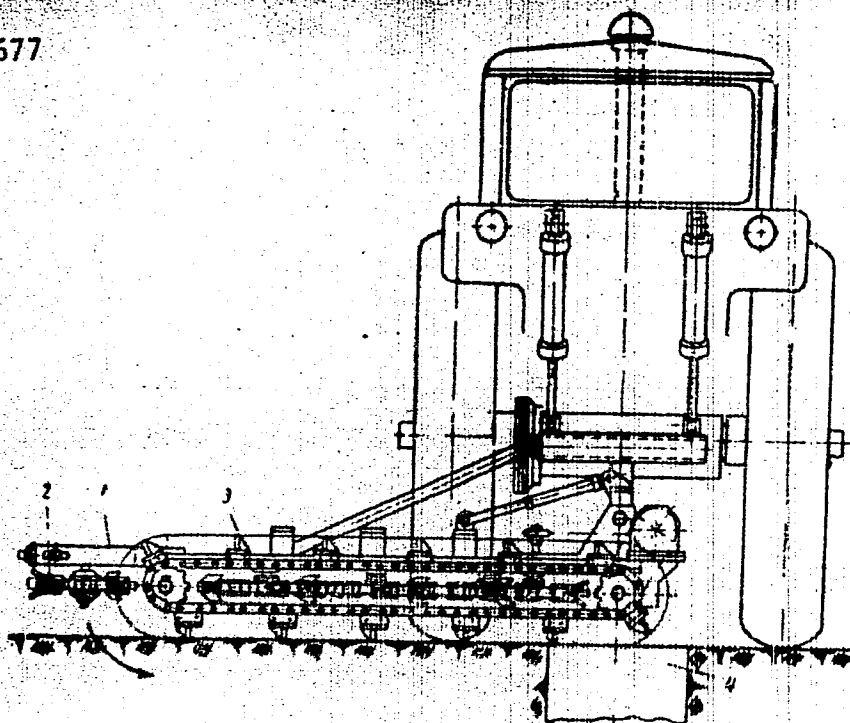
1/3

18

19821444



AA0052677



19821445

AA0052677

Poltavtsev, I. S.; Smryagin, A. G.; Protsenko, V. V.; Shvedov, V. Ye.;  
Zgurskaya, L. M.; Lekhovich, I. F.; Rutberg, Ye. I.; Borovik, N. A.,  
Kiyevskiy Filial Tsentral'nogo Nauchno-Issledovatel'skiy Instituta  
Svyazi

3/3

19821446

USSR

UDC: 621.375.82

MAKHORIN, V. I., POPOV, A. I., PROTSENKO, Ye. D.

"Retuning Helium-Neon Laser Wavelength from 3.3912 to 3.3922  $\mu\text{m}$ "

Moscow, Kvant. elektronika--sbornik (Quantum Electronics--collection of works), No 1(13), "Sov. radio", 1973, pp 47-55 (from RZh-Fizika, No 8, Aug 73, abstract No 8D1041 by the authors)

Translation: An investigation is made of the competition of lines with  $\lambda_0 = 3.3912 \mu\text{m}$  and  $\lambda_1 = 3.3922 \mu\text{m}$  in a helium-neon laser. It is theoretically determined that the maximum emission output on line  $\lambda_1$  is equal to 50% of the power on line  $\lambda_0$ . The experimental output was 40% of the given power. The rate of decay of the lower level of line  $\lambda_1$  is determined, and it is found that the rate of decay of the lower levels of these lines is independent of pressure. Bibliography of 9 titles.

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USSR

UDC 621.378.335

VDOVIN, YU.A., GUBIN, M.A., YERMACHENKO, V.M., PROTSENKO, YE.D.

"Mode Competition At  $\bar{3}_{s2} \rightarrow \bar{3}_{p4}$  Neon Transition In A Laser With Methane Absorption Cell"

Kvantovaya elektronika (Quantum Electronics), Moscow, No 6(12), 1972, pp 105-107

Abstract: Previous papers of which Gubin and Protzenko were coauthors reported on the obtainment of contrasting peaks of power and frequency stabilization in a helium-neon generator at the junction  $\bar{3}_{s2} \rightarrow \bar{3}_{p4}$  ( $\lambda = 3.39$  micron) with a methane absorption cell. The high degree of contrast and contraction were obtained by virtue of the use of the effect of competition of axial modes arranged symmetrically with reference to the amplification line. The present paper studies the behavior of the intensity of one of the modes in a two-mode laser with an absorption cell and an orthogonal polarization of modes. The contrast, the width and position of the resonance peak of power relative to the center of the absorption line are determined. 4 ref. Received by editors, 1 Dec 1971.

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USSR

UDC 621.373:530.145.6

BASHKIN, A. S., BELENOV, E. M., GONCHUKOV, S. A., ORAYEVSKIY, A. N.,  
PETROVSKIY, V. N., PROTSENKO, Ye. S.

"Stabilizing the Emission Frequency of a Gas Laser by the Method of Comparison With a Radio Frequency"

V sb. Kvant. elektronika (Quantum Electronics--collection of works),  
No 2, Moscow, 1971, pp 40-48 (from RZh-Radiotekhnika, No 7, Jul 71,  
Abstract No 7D117)

Translation: The authors study intermode spacing as a function of various laser parameters for a laser operating on a wavelength of 0.63 micron emitting three or two axial modes. It is proposed that certain properties of the frequency responses be used for stabilizing the emission frequency of a gas laser by the method of comparison of the intermode spacing with a radio frequency. A theoretical study is made of the resultant experimental data for the case of emission of three axial modes in the region of symmetric tuning. It is shown that a stabilized gas laser can be made with relatively long-term frequency stabilization, surpassing the results which have been achieved up to the present time. The absolute frequency stability of such a laser (in the case of high relative stability for long time intervals) will be determined by the

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USSR:

BASHKIN, A. S., et al., Kvant. elektronika (Quantum Electronics--collection of works), No 2, Moscow, 1971, pp 40-48 (from RZh-Radiotekhnika, No 7, Jul 71, Abstract No 7D117)

shift in the center of the line of the atomic transition as a consequence of various factors. Six illustrations, bibliography of four titles.

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USSR

UDC 621.378.33.016.35

BASHKIN, A. S., BELENOV, E. M., GORCHUKOV, S. A., ORAYEVSKIY, A. I.,  
PETROVSKIY, V. E., PROSEKNO, Ye. D.

"Stabilizing the Frequency of Gas Laser Emission by the Method of Comparison With a Radio Frequency"

Moscow, Kvantovaya Elektronika, No 2, 1971, pp 40-49

Abstract: The authors study the intermode spacing as a function of various parameters of a laser on a wavelength of  $0.63 \mu$  operating under conditions of emission of three or two axial modes. It is proposed that certain properties of the frequency characteristics be used to stabilize the emission frequency of a gas laser by the method of comparing the intermode spacing with a radio frequency. The resultant experimental data are theoretically studied for the case of emission of three axial modes in the region of symmetric tuning. It is shown how a stabilized gas laser can be made with a relative long-term frequency stability exceeding the results which have been attained up to the present time. The absolute frequency stability of such a laser (assuming high relative stability for long time intervals) will be determined by the displacement of the center of the line of the atomic transition due to various factors.

1/1

Acc. Nr:

AP0042293

Ref. Code: UR 0422

PRIMARY SOURCE: Standarty i Kachestvo, 1970, Nr 1, pp 58-62

Systems of Meant Tolerances and Their Effect upon  
Economy of Production and Engineering Labour.  
B. A. Protsenkov "Standarty i kachestvo", 1970,  
No. 1.

The economy of manufacturing processes and that of  
the labour of design and production engineering person-  
nel depend on the system of limit tolerances that are  
not shown in the drawings (tolerances on free dimen-  
sions). The author proves the necessity of employing a  
system of symmetric tolerances for these dimensions. )

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REEL/FRAZE  
19760229

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1/2 020 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--HIGH TEMPERATURE RADIOLYSIS OF M, TERPHENYL AND ITS HYDROGENATED  
DERIVATIVES -U-  
AUTHOR--(03)--LAVROVSKIY, K.P., PROTSIDIN, P.S., TITOV, V.B.  
COUNTRY OF INFO--USSR  
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(5), 1066-9 (CHEM)  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY  
TOPIC TAGS--RADIOLYSIS, HIGH TEMPERATURE EFFECT, BENZENE DERIVATIVE,  
HYDROGENATION, WATER MODERATED REACTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3006/1217 STEP NO--UR/0020/70/191/005/1066/1069  
CIRC ACCESSION NO--AT0134891  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 020

CIRC ACCESSION NO--ATO134891

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RADIOLYSIS AT 370DEGREES IN A NUCLEAR, WATER MODERATED REACTOR IS DESCRIBED FOR M,TERCYCLOHEXYL, M,TERPHENYL, AND 30-60PERCENT HYDROGENATION PRODUCTS OF THE LATTER. THE RADIATION YIELDS OF PRODUCTS INCLUDING C SUB12 H SUB10, C SUB12 H SUB22, C SUB7 H SUB11, C SUB6 H SUB8, C SUB6 H SUB12, AND THE TOTAL GASES ARE TABULATED. THE GAS YIELD WAS LINEAR WITH THE DOSE OF RADIATION. FORMATION OF THE C SUB1-5 PRODUCTS SHOWED THAT RADIOLYSIS OF HYDROGENATED TERPHENYLS RESULTS IN CONSIDERABLE INTRAMOL. CLEAVAGE OF C-C BONDS IN THE HEXAMETHYLENE RINGS AND INTER RING BRIDGES. THE COMPLETELY HYDROGENATED MATERIAL GAVE THE GREATEST YIELD (28PERCENT) OF HIGHER BOILING PRODUCTS, RELATIVE TO THE STARTING MATERIALS, BUT AS RADIATION DOSE INCREASED, THE DIFFERENCES BETWEEN VARIOUS SUBSTRATES BECAME SMALLER. FACILITY: INST. NEFTEKHIM, SIN. IM. TOPCHIEVA, USSR.

UNCLASSIFIED

USSR

UDC 621.785.53:620.194.8

PROTSIK, V. G., ZAMIKHOVSKIY, V. S., and POKHITSKIY, V. I.,  
Institute of Physico Mechanics of the Ukrainian Academy of  
Sciences, L'vov

"Effect of Alloying Elements on the Cyclical Durability of  
Medium-Carbonized Steel After Boronizing"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 5,  
1970, pp 18-21

Abstract: To obtain the proper steels for their experimental  
research, the authors used each of the following elements:  
silicon manganese, nickel, and chromium. These were added to  
the extent of one or two percent to medium-carbonized steel  
(type 45 alloy). The boron was diffused by the contact method  
in a powdered mixture of boron carbide and borax for six hours  
at a temperature of 950° C. The structure of the diffused  
layers and the mechanical characteristics of the steels before  
and after the boronization process as well as the method used  
for investigating the cyclic durability of the steels in air  
and in the corrosive medium were described in an earlier paper  
1/2

USSR

PROTSIK, V. G., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 5, 1970, pp 18-21.

by the authors for this same journal (No 6, 1969). The results of the experiments showed that the alloying elements in the medium-carbonized steels in the one or two-percent concentration affected the durability of the steels in different ways, in air and in the corrosive medium, before as well as after boronizing. After boronization, the durability limit in all steels treated with the above-named elements increased. The greatest effect on the durability was observed for the steel to which silicon in the amount of 1% was added.

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1/2 034 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--EFFECT OF SMALL QUANTITIES OF ALLOYING ELEMENTS ON THE STRUCTURE  
AND STRENGTH OF MEDIUM CARBON BORATED STEEL -U-  
AUTHOR--PROTSIK, V.G.; ZAMIKHOVSKIY, V.S., POKHMURSKIY, V.I. P  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 5(6) 661-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--MEDIUM CARBON STEEL, CREEP, IMPACT STRENGTH, PLASTICITY,  
BORIDING, BORONIZING, NICKEL CONTAINING ALLOY, SILICON CONTAINING ALLOY,  
MANGANESE CONTAINING ALLOY, CHROMIUM CONTAINING ALLOY, CARBIDE  
CONTAINING ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/0626 STEP NO--UR/0369/70/005/006/0661/0665  
CIRC ACCESSION NO--AP0105605  
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--11SEP70

ZIRC ACCESSION NO--AP0105605

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL 45 TO WHICH ONE OF THE FOLLOWING ELEMENTS (1 AND 2 WT. PERCENT) WAS ADDED: SI, MN, NI, AND CR. THE BORONIZING WAS CARRIED OUT BY POWDER CONTACT METHOD IN A MIXT. OF B CARBIDE AND BORAX FOR 6 HR AT 950DEGREES. THE PRESENCE OF ALL ALLOYING INGREDIENTS DECREASED THE THICKNESS OF THE BORONIZED DIFFUSION LAYER, (WITH SI AND MN 20-30PERCENT AND WITH CR AND NI IS SIMILAR TO 10PERCENT). MICROHARDNESS DID NOT CHANGE, AT 1PERCENT LEVEL, WHILE AT 2PERCENT THERE WAS SOME DECREASE (10-20PERCENT). TENSILE STRENGTH AND ULTIMATE CREEP POINT INCREASED 15-30PERCENT, WHILE PLASTICITY INDICES (INCLUDING IMPACT STRENGTH) DECREASED SHARPLY AND VARIOUSLY (10-50PERCENT). WITH NI THE IMPACT STRENGTH DECREASED TO ONE SEVEN. THE INCREASE OF ALLOYING LEVEL FROM 1 TO 2PERCENT ACCENTUATED THE DECREASE OF PLASTICITY INDICES..

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--EFFECT OF SMALL QUANTITIES OF ALLOYING ELEMENTS ON THE STRUCTURE  
AND STRENGTH OF MEDIUM CARBON BORATED STEEL -U-  
AUTHOR--PROTSIK, V.G., ZAMIKHOVSKIY, V.S., POKHMURSKIY, V.I.  
COUNTRY OF INFO--USSR  
SOURCE--FIZ. KHIM. MEKH. MATER. 1970, 5(6) 661-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--MEDIUM CARBON STEEL, CREEP, IMPACT STRENGTH, PLASTICITY,  
BORIDING, BORONIZING, NICKEL CONTAINING ALLOY, SILICON CONTAINING ALLOY,  
MANGANESE CONTAINING ALLOY, CHROMIUM CONTAINING ALLOY, CARBIDE  
CONTAINING ALLOY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1988/0626 STEP NO--UR/0369/70/005/005/0661/0665  
CIRC ACCESSION NO--AP0105605  
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0105605

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH STEEL 45 TO WHICH ONE OF THE FOLLOWING ELEMENTS (1 AND 2 WT. PERCENT) WAS ADDED: SI, MN, NI, AND CR. THE BORONIZING WAS CARRIED OUT BY POWDER CONTACT METHOD IN A MIXT. OF B CARBIDE AND BORAX FOR 6 HR AT 950DEGREES. THE PRESENCE OF ALL ALLOYING INGREDIENTS DECREASED THE THICKNESS OF THE BORONIZED DIFFUSION LAYER, (WITH SI AND MN 20-30PERCENT AND WITH CR AND NI IS SIMILIAR TO 10PERCENT). MICROHARDNESS DID NOT CHANGE, AT 1PERCENT LEVEL, WHILE AT 2PERCENT THERE WAS SOME DECREASE (10-20PERCENT). TENSILE STRENGTH AND ULTIMATE CREEP POINT INCREASED 15-30PERCENT, WHILE PLASTICITY INDICES (INCLUDING IMPACT STRENGTH) DECREASED SHARPLY AND VARIOUSLY (10-50PERCENT). WITH NI THE IMPACT STRENGTH DECREASED TO ONE SEVEN. THE INCREASE OF ALLOYING LEVEL FROM 1 TO 2PERCENT ACCENTUATED THE DECREASE OF PLASTICITY INDICES.

UNCLASSIFIED



USSR

UDC: 622.243.94

BELYAYEV, V. P., VERCHEBA, A. O., MARTYNOV, V. F., PROPSVETOV, Yu. G.,  
SHCHENNIKOV, Ye. V., Moscow Geological Prospecting Institute imeni S.  
Ordzhonikidze

"Some Results of Modeling of the Process of Thermomechanical Destruction  
of Rocks, Using a Laser as the Heat Generator"

Moscow, IVUZ Geologiya i Razvedka, No 7, Jul 71, pp 125-126

Abstract: The authors discuss the feasibility of using lasers as the heat source for combination thermomechanical destruction of rocks. Research was done using a 30-watt continuous laser based on a mixture of CO<sub>2</sub>, N<sub>2</sub>, and He. The rock specimen was chucked up in a lathe with a special device for controlling tool pressure over a wide range. The laser beam was focused ahead of the tool into a spot with a diameter equal to the width of the tool. Spindle rotation was 18 rpm, and cutting was done for 3 minutes. The effectiveness of laser heating was determined by comparison with rock destruction by cutting alone. The results show that heating increases cutting effectiveness by a factor of 2.25-3.5. One table.

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- 64 -

USSR

UDC 612.84.581.185.64

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Chair of Physiology of Higher Nervous Activity, Moscow State University

"Analysis of the Process of Perception During Evaluation of Change in Distance"

Moscow, Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

Translation: The purpose of this work was to determine the correlation between the performance and efficiency of the visual system in judging distance under the following conditions: (a) with unrestrained looking, (b) with accommodation and convergence excluded, and (c) with the size of the image on the retina constant (control).

The experimental method was as follows. With unrestrained looking, the test object (spot of light) was projected onto a semispherical screen. The object was successively removed 750, 1000, and 1250 mm from the observer. The range of shifts ( $\Delta l$ ) was 30, 60, and 90 mm, respectively. Eye movements were recorded with an inductive sensor attached to a sucking disk.

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USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

With accommodation and convergence excluded, a microtachistoscope with a polarizing film was attached to the eyeball by means of a P3-P6 central sucking disk. This made it possible to present the observer with large and then small spots of light simulating near and more remote distances. Accommodation was blocked with a special device setting the test object to infinity. The device consisted of a magnifying glass and mobile support with a sucking disk on which were mounted a lens and sliding tube with the test object.

Experiments with the image on the retina constant were performed with a micro-projector attached to the eyeball with a central sucking disk. The angle of slope of the projector was such that at a certain distance the image of the test object projected coincided with the visual axis of the observer. The latter had to determine the change in position of the object.

The first stage of the experiment involved determining the threshold of discrimination with unrestrained looking. It amounted to 1 to 2%. The threshold of discrimination with accommodation and convergence blocked was 18 to 20%.

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USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

A microprojector (control) was used to record the eye movements (second stage). The motor activity of the eye with unrestrained looking was found to increase the resolving power of the visual system. Specifically, the threshold of discrimination in judging distance was no less than 1 to 2%, an indication of the high resolving power of the visual system. No significant difference in eye movements were noted after the distance of the test object was changed. When accommodation and convergence were blocked, the efficiency of the visual system decreased substantially and the threshold of discrimination rose to 18 to 20%. Recording of the eye movements revealed the absence of any specific fixations. Saccadic movements changed to drift and nystagmus appeared. The very fact of the lack of fixation indicates that each momentary position of the eye is not controlled by the proprioceptive link in regulation but results from reflex action of the optic signal.

V. P. Zinchenko and N. Yu. Vergiles (1969) state that when the image on the retina is stabilized, the subject has no basis for judging the position of the eye or keeping it in a fixed position.

3/5

USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

When the size of the image on the retina was constant, the observer was unable to judge change in distance. Completely absent from the eye movements were tracking functions to preserve the background motor activity.

Thus, our findings suggest that with unrestrained looking, accommodation and convergence limit the motor activity of the eye when it is fixed on an object and thereby increase the accuracy of judgments concerning change in distance, i.e., the efficiency of discrimination.

The results of our experiments are consistent with the data presented by B. N. Kompaneyskiy (1941) who showed that the sensations of convergence (accommodation) do not affect the judgment of distance directly, that they do so indirectly by altering the size of the image on the retina.

#### BIBLIOGRAPHY

1. Zinchenko, V. P. and N. Yu. Vergiles, Formirovaniye zriten'nogo obraza (Formation of Visual Images), Moscow State University Press, 1969.

4/5

- 35 -

USSR

KOTLYARSKIY, A. M. and PROTUSEVICH, Yu. M., Vestnik Moskovskogo Universiteta, Biologiya, Pochvovedeniye, No 5, 1971, pp 106-109

2. Kompaneyskiy, B. N., O roli konvergentssii v vospriyatii glubiny prostranstva (Role of Convergence in the Perception of Spatial Depth), 1941, Moscow-Leningrad, Academy of Medical Sciences Publishing House.

USSR

UDC 669.721.042.6(088.8)

TAGAKIN, A. N., KORZNIKOV, V. M., BELKIN, G. I., ALONTSEV, V. S., ~~PROVODNIKOV, A. A.~~, MAZUROV, G. A., TITAYEV, I. A., PUTINA, O. A., MATSUY, N. V., BOCHKAREV, G. V., NAGIBIN, V. M.

"Method of Processing of Magnesium Ingots"

USSR Author's Certificate No 313908, filed 16/03/70, published 10/11/71,  
(Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract  
No 5 G248 P by G. Svodtseva).

Translation: A method of processing of Mg ingots including transportation, cooling, mechanical working, washing, etching, drying and covering with a protective layer is proposed. In order to reduce the labor expenditures for the process and process time, the ingots are subjected to forced cooling to 450-100°, mechanically worked during transportation, and washed at 350-100°. This reduces labor consumption, decreases the time of the process, and increases the productivity of labor by 40-80%.

1/1

USSR

UDC: 681.333:51

PROZOROV, A. A.

"An Analog Device for Modeling Transcendental, Algebraic, and Differential Equations"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 36, Dec 72, Author's Certificate No 360671, Division G, filed 6 Nov 70, published 28 Nov 72, pp 125-126

Translation: This Author's Certificate introduces an analog device for modeling transcendental, algebraic, and differential equations. The device contains a module for permanent storage of functions of a generalized argument with trigger oscillator, an immediate-access analog memory module, adders, and integrators. The immediate-access memory has a control unit based on comparison elements and controlled diodes. As a distinguishing feature of the patent, the device is simplified by connecting the linear output for the generalized argument in the fixed memory module to some of the inputs of the comparison units of the block for controlling the immediate-access analog memory, while the outputs of the modeled functions of the generalized argument in the permanent memory module are connected,

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USSR

PROZOROV, A. A., USSR Author's Certificate No 360671.

through diodes coupled to the comparison elements, to the outputs of the storage elements in the permanent analog memory module. The outputs of these storage elements are connected through an intermediate adder to the inputs of two comparison elements and the integrator input, as well as being tied to the inputs of the output adder.

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USSR

UDC: 51

PROZOROV, S. Ye.

"On a Method of Solving the Problem of Operational Planning of the Production Work of an Aircraft Equipment Base"

Tr. Seminara po metodam mat. modelir. i teorii elektr. tsepey. In-t kibernet. AN USSR (Works of the Seminar on Methods of Mathematical Modeling and Electric Circuit Theory. Institute of Cybernetics, Academy of Sciences of the Ukrainian SSR), 1971, vyp. 9, pp 77-82 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V509)

Translation: This paper deals with construction of a mathematical model of the process of operational control of the depletion of the aircraft reserve of an air base with fulfillment of the condition of regularity in removing aircraft for technical servicing by operational calendar planning of flights of different durations. The method is applicable to digital-analog modeling of problems by the PERT technique. Author's abstract.

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Acc. Nr: AP0046228 **P**

Ref. Code: UR 0646

PRIMARY SOURCE: Teoreticheskaya i Matematicheskaya Fizika, 1970,  
Vol 2, Nr 2, pp 244-253

THE SELF-CONSISTENT FIELD NEAR THE CRITICAL POINT  
IN THE ANTIFERROMAGNETIC ISING MODEL

V. Ya. Krivnov, O. A. Olkhov, B. N. Provotorov,  
M. Ye. Sarychev

From the physical considerations the class of diagrams is found which determine the thermodynamic behaviour of the antiferromagnetic and ferromagnetic Ising models for  $T < T_k$  ( $T_k$  being the critical temperature) in the case of interaction of the nearest neighbours. By means of summation of these diagrams the type of a singularity is found for the antiferromagnetic susceptibility and in the ferromagnetic case — for the polarisation, susceptibility and specific heat. In the ferromagnetic case the region of the critical behaviour is determined ( $z^{-2} < \frac{T_k - T}{T_k} < z^{-1}$ ,  $z$  being the number of the nearest neighbours). The reconstruction of the series of diagrams is carried out, which makes it

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AP0046228

possible correct evaluation of the critical temperature. The summation of diagrams leads to a transcendent equation and concrete results are obtained by means of its numerical solution. The calculations of the critical behaviour in the present method are less voluminous than if the high- and low-temperature expansions are exploited. The results obtained are in a good accordance with the experimental data and with the results of the numerical methods.

2/2

19781345

PI

USSR

UDC 615.471:616-12-008.31-073.96

FILYAKIN, B. F., Voronezh Medical Institute, and ~~PROVOTOROV~~ V. M., Voronezh Polytechnic Institute

"A Device for Contactless Recording of the Pulse and Kinetocardiogram"

Moscow, Meditsinskaya Tekhnika, No 6, Nov/Dec 71, pp 21-22

Abstract: Most well-known methods of recording the vibration of the chest cage and arterial pulse have a number of serious shortcomings as a result of the need to place sensors directly on the body of the patient. Utilizing the principles embodied in an electrometer tube described in the literature, the authors of the present article developed a contactless recording device. In place of sensors, it uses the capacitor which is formed by the grounded body of the patient and an electrode placed at a distance of two to five millimeters from him. In contrast to other available units, the new device is distinguished by its simplicity. The authors give a sketch of the principal circuit and compare a sample of its output with that from a conventional electrocardiogram.

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- 8 -

Cardiovascular Diseases

USSR

UDC 616.12-073.43-073.96

TUMANOVSKIY, M. N. M. PROVOTOROV, V. M., AND FILYAKIN, B. F., Department of Hospital Therapy, Voronezh Medical Institute, and Department of Rigid Body Physics, Voronezh Polytechnic Institute'

"A Method of Remote (Contactless) Phonocardiography and Its Clinical Significance"

Moscow, Kardiologiya, Vol 12, No 6, 1972, pp 84-89

Abstract: Contact between a phonocardiographic sensor and the body surface causes changes in signal characteristics. In addition, occasionally it is impossible to attain the firm contact necessary for reliable recordings. Therefore a converter has been developed with which recordings can be made with the sensor 5-10 mm away from the body surface. The instrument was tested on healthy individuals and patients with cardiac illnesses. Recordings were compared with contact phonocardiograms. Among healthy individuals the components of I and II sounds were recorded distinctly by the remote method but were not always detected by the contact method. III and IV sounds were detected much more frequently by the remote method. Among patients with tonsillocardiac syndrome the III sound was recorded twice as often by the remote method, while the contact method altered the signals, probably due to 1/2

USSR

TUMANOVSKIY, M. N., et al., Kardiologiya, Vol 12, No 6, 1972, pp 84-89

the damping effect of the sensor's contact with the body. Among patients suffering cardiac failure, mitral valve operation could be distinguished with the remote method and not with the contact method. The remote method was also employed diagnostically on patients with congenital heart diseases. For example, with its employment it was possible to distinguish between rheumatic stenosis of the aortic ostium and coarctation of the aortic isthmus, and not so with the contact method. Thus this remote method is superior to the contact method, particularly with respect to diagnosis.

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USSR

UDC: 629.78.015:533.6.011.55

GORENBUKH, P. I., PROVOTOROV, V. P.

"Experimental Study of Hypersonic Flow about an Axisymmetrical Body with a Break in the Generatrix"

Uch. Zap. Tsentr. Aero-Gidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], 1973, Vol 4, No 1, pp 92-96 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 6, 1973, Abstract No 6.41.104 from the Resume).

Translation: Results are presented from an experimental study of the distribution of pressure over an axisymmetrical, stepped body in a hypersonic stream of helium. Tests were performed in two modes corresponding to values of viscous interaction parameter  $\chi = 0.67$  and  $0.125$ , when perturbations were present in the boundary layer. The perturbations were induced by conical "skirts" with various aperture angles, located in the stern portion of the body. The data produced agreed with numerical calculations performed. 6 figures, 7 biblio. refs.

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USSR

UDC:629.78.015:533.6.011.55

PROVOTOROV, V.P.

"On Propagation of Perturbations Through Axisymmetric Hypersonic Boundary Layer"

Moscow, Uch. Zap. Tsentr. Aerogidrodinam, In-ta (Works of Central Aerohydrodynamic Institute), 1972, No 6, pp 41-46 (from Referativnyy Zhurnal-Raketostroyeniye, 1973, Abstract No 4, 41, 150)

Translation: Quantitative estimates are given on the effect of perturbations, propagating upstream through the hypersonic boundary layer, on integral and local characteristics of an axisymmetric flow about a sedate body. Calculations are given for various values of viscous interaction parameter, degree of body surface cooling and ratio of specific heats. 5 illustrations. 2 tables. 6 references. Author's resume.

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USSR

PROVOTOROV, V. P.

UDC 533.6.011

"On Viscous Interaction at a Plate in a Hypersonic Flow of a Nonuniformly Dissociating Gas"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamic Institute), 1971, Vol. 2, No. 2, pp 25-32 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12B399)

Translation: The results of calculations of flow over a sharp plate at zero angle of attack by a nonuniformly dissociating diatomic gas considering the interaction of the boundary layer and the nonviscous flow are presented. The boundary layer is calculated by the finite difference method and the parameters of the nonviscous flow at the outer boundary of the boundary layer were determined by the tangent wedge method. An iteration process was applied due to the mutual effect of the solutions for the external flow and the boundary layer. Numerical results are presented that were obtained for cases of the flow of oxygen over catalytic and noncatalytic plates at the first and second cosmic velocities. It is noted that in this range of variation in the parameters of the problem, the aerodynamic characteristics obtained considering

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USSR

PROVOTOROV, V. P., *Uch. zap. Tsentr. aerogidrodinam. in-ta*, 1971, Vol. 2,  
No. 2, pp 25-32

nonuniform dissociation differ by 2-5% from the corresponding characteristics for the case of attenuated flows and the effect of the degree of catalytic action of the surface does not exceed 2%. In addition, the extremely slight effect of radiation in the case of an optically thin boundary layer on thermal flows on a plate at the second cosmic velocity is pointed out on the basis of these calculations. A. I. Tolstykh.

AA0047080-

Proymin, G.S.

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 1/70

243088 TELEVISION SET-UP to convert a scan diagram obtained in isotope diagnostics of neoplasms includes a two-beam electron tube 1 for the illumination of the diagram on film 2 and photo-multiplier 4. HF filter 7 passes a pulse

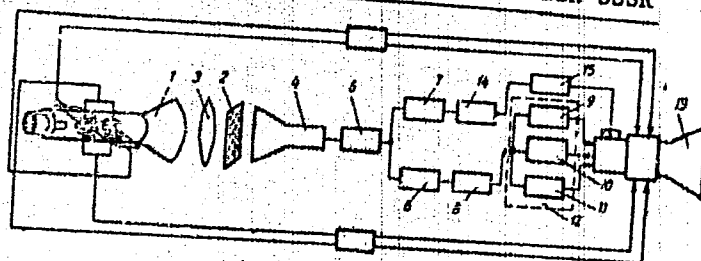
1/2  
signal through an amplifier and shaper to colour tube 13 whereas LF filter 6 passes a continuous component through a background cutoff unit with three threshold elements 9, 10, 11 with an adjustable background level to switch on and off the red, green and blue rays of 13. 22.12.67. as 1205670/31-16. I.A. LEDNEV et alia. Medical Radiology Inst. Acad. Medical Sciences USSR. (16.9.69.) Bul.16/5.5.69. Class 21g. Int. Cl. H01j.

4

19790552

AA0047080

AUTHORS: Lednev, I. A., Tarasov, V. M., Proymin, G. S.  
Institut Meditsinskoy Radiologii Akademii Meditsinskikh Nauk SSSR



19790553

USSR

UDC: 621.397

LEDNEV, I. A., TARASOV, V. M., PROYML, G. S., Institute of Medical  
Radiology, Academy of Medical Sciences of the USSR

"A Television Device for Conversion of Scannograms"

USSR Author's Certificate No 229728, filed 18 Jul 67, published 9 Jun 70  
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12G212 P)

Translation: A distinguishing feature of the proposed device is that  
the dose of radioactive substance introduced is cut down by using a two-beam  
CRT for scannogram illumination. One beam is defocused and illuminates the  
region in the form of a circle, while the other focused beam is concentric  
with the first and illuminates a point at the center of the circle. One  
illustration. A. M.

USSR

UDC 575.24:578

PROZOROV, A. A., SAVCHENKO, G. V., NAUMOV, L. S., and LAKOMOVA, N. M., All Union Scientific Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow

"Mutants of *Bacillus subtilis* with a Modified DNA Donor Capacity in Spontaneous Transformation. I. The Method of Isolation of Mutants."

Moscow, Genetika, Vol 8, No 3, Mar 72, pp 79-86

Abstract: A method was developed for the isolation of *Bac. subtilis* mutants with a modified capacity of acting as donors of DNA in spontaneous transformation. The donor strain *Bac. subtilis* thr<sup>-</sup>thy<sup>-</sup>met<sup>-</sup> was derived from a thy<sup>-</sup>met<sup>-</sup> strain by treating the latter with diethylsulfate, whereupon 0.1-1% of the cells survived. Subsequent application of thymine starvation and treatment with penicillin killed cells with a normal rate of growth, while cells of ts-mutants with respect to DNA synthesis survived because of their subnormal rate of growth. To isolate mutants with modified donor capacity, mutagenized colonies of the donor strain were imprinted on agar covered with surface colonies of the recipient strain *Bac. subtilis* 39-22 leu<sup>-</sup>his<sup>+</sup>ind<sup>-</sup>. For the genetic mapping of auxotrophic mutations, strains leu<sup>-</sup>his<sup>+</sup>ind<sup>-</sup> and leu<sup>-</sup>his<sup>+</sup>ind<sup>+</sup> were transformed that had been obtained from strain 39-22 by treatment with DNA of the corresponding mutants. The transforming DNA was isolated by a modified Kirby

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USSR

PROZOROV, A. A., et al., Genetika, Vol 8, No 3, Mar 72, pp 79-86

method. To determine the relative distance of mutations from the markers  $his_2$  and  $ind$ , the method of difactor crossings was applied. Fourteen mutations of the donor strain with modified donor capacity were isolated. Most mutations showed linkage and the  $his_2$  and  $ind$  markers. The method applied makes it possible to isolate other auxotrophic mutations as well with the same marker linkage as that associated with modified donor capacity.

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USSR

UDC 575.24:576.851.5

PROZOROV, A. A., KALININA, N. A., and SHILINA, V. N., All-Union Scientific Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow

"Investigation of *Bacillus subtilis* Mutants With Altered Capacity to Form Competent Cells"

Moscow, Genetika, Vol 7, No 12, 1971, pp 83-93

Abstract: A total of 110 almost completely incompetent mutant strains were separated from the parent strain *Bacillus subtilis* SB-25. Most of them lacked the competence-inducing factor, were incapable of spontaneous autolysis as a result of the absence of the lytic enzyme and because of a restructured cell wall, and displayed altered sporulation. In some mutants with inhibited autolysis, the transformation capacity was partly restored after addition to the culture of a small quantity of lysozyme. The competence of a few mutants was increased as a result of a higher concentration of the competence factor. In several mutants, the causes of their inhibited competence could not be elucidated. Evidence indicates that the competence factor is not identical with the autolytic enzyme and that the role of autolysis in the process of transformation cannot be reduced to the secretion of the competence factor.

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USSR

NAUMOV, L.S., PROZOROV, A.A., SAVCHENKO, G.V., and VELIKZEANINA, G.A., All Union Scientific Research Institute of Genetics and Selection of Industrial Microorganisms, Moscow

"Comparative Study of Induced Mutagenesis in Rec<sup>+</sup> and Rec<sup>-</sup> Strains of *Bacillus subtilis*"

Moscow, Genetika, Vol 6, No 3, 1970, pp 51-58

Abstract: In previous works, mutants of *B. subtilis* with disrafted recombination and elevated sensitivity to various mutagens were described. It was observed that mutations were localized in the same part of the chromosome. Experiments on the mutagenic influence of diethylsulfate and embichine 7 on the initial and rec strains are described. The number of auxotrophic mutations in the strain *Bacillus subtilis* rec 149 was greater than in the initial strain. This may be due to errors in syntheus of reparative DNA in rec-strains.

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USSR

UDC 621.77.22

PROZOROV, L. V., KOSTAVA, A. A., REVTOV, V. D.

"High-Pressure Hydrostatic Extrusion of Metals"

Moscow, Pressovaniye metallov zhidkost'yu vysokogo davleniya (cf. English above), Mashinostroyeniye, 1972, 151 pp (from Pressovaniye metallov zhidkost'yu vysokogo davleniya, p 2, 152)

Translation: Data from the studies of the effect of pressure working on the properties of metals and alloys are classified in this book.

The characteristic features of high-pressure liquid extrusion of metals are described. The technological process for producing bars and pipe is presented and recommendations are made with respect to the calculation, selection and production of instruments. The results from experimental studies of liquid extrusion of low-plastic metals are given.

The book is designed for engineering and technical workers engaged in pressure working of metals.

There are 8 tables, 123 illustrations and a 47-entry bibliography.

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USSR

PROZOROV, L. V., et al., Pressovaniye metallov zhidkost'yu vysokogo davleniya, Mashinostroyeniye, 1972, 151 pp

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USSR

PROZOROV, L. V., et al., Pressovaniye metallov zhidkost'yu vysokogo davleniya, Mashinostroyeniye, 1972, 151 pp

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2. Tool for Metal Extrusion .....	123
3. Testing the Mechanical Properties of Materials under Pressure ..	133
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USSR

UDC: 531.787.7

PODGOYETSKIY, M. L., SHVARTSER, V. I., SHEYNKERMANN, E. Z., MOSKVIN, M. A.,  
MAR'YANOVSKIY, Ya. M., LIVSHITS, A. M., PROZOROV, M. A., "Tsvetmetavto-  
matika" Special Design Office

"A Pneumatic Compensation Differential Manometer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,  
No 36, Dec 71, Author's Certificate No 322676, Division G, filed 24 Nov 69,  
published 30 Nov 71, p 138

Translation: This Author's Certificate introduces a pneumatic compen-  
sation differential manometer which contains a diaphragm measurement unit  
consisting of a support cushion, diaphragms, a diaphragm connector and a  
needle gate valve. The manometer also contains a converter which changes  
force to a pneumatic signal. As a distinguishing feature of the patent,  
The accuracy and reliability of the device are improved by making the  
diaphragm connector in the form of a hollow stepped cylinder with flanges  
for fastening the diaphragms. The needle gate valve is located in the  
inner cavity of the cylinder, which is equipped with a frame with contact  
support element.

1/1

USSR

PROZOROV, S.

UDC: 8.74

"On a Method of Constructing a Permissible Set of Branch-Independent Paths in a Multinet"

Dopovidi AN URSR, 1972, A, No 12, pp 1090-1091, 1150 (from RZh-Kibernetika, No 5, May 73, abstract No 5V811 by the author)

Translation: A method is proposed for constructing a set of branch-disjoint paths of given length in unidirectional finite multinet. The procedure is based on analyzing sections of a structurally ordered multinet and its subnets. The method is realized on a computer device which contains an electronic digital analog of the multinet.

1/1

Simulations

USSR

UDC 519.1

PROZOROV, S. YE.

"Feasibility of Modeling a Path of Given Length on a Unidirectional Graph"

Kiev, Kibernet. tekhnika--Sbornik (Cybernetic Equipment -- Collection of Works), No 8, 1970, pp 65-70 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V393, by V. Antipov)

Translation: The method of digital modeling of a path with given length in an oriented graph is examined. Calculations were carried out on a specialized digital computer that lead to a reduction in the time of computation. A block diagram of the device is presented and its operation is described.

1/1



1/2 011 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--QUALITATIVE STUDY OF SOLID PHASE MIXING IN A FLUIDIZED BED BY A  
FREEZING METHOD -U-  
AUTHOR--(03)-BUDKOV, V.A., MASLOVSKIY, M.F., PROZOROV, YE.N.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(3), 216-17  
DATE PUBLISHED-----70  
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, CHEMISTRY  
TOPIC TAGS--FLUIDIZED BED, SINTERING FURNACE, SAND, QUARTZ, RESIN,  
CHEMICAL DEPOSITION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3008/0342 STEP NO--UR/0064/70/046/003/0216/0217  
CIRC ACCESSION NO--AP0137446  
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE "FREEZING" METHOD, A LAYER OF QUARTZ SAND PARTICLES COATED WITH THERMOSETTING RESINS WITH VARIOUS COLORS IS FLUIDIZED FOR 1-2 SEC., THE FLUIDIZED BED COLUMN IS THEN HEATED FOR 30-40 MIN. AT 130DEGREES SO THAT THE PARTICLES ARE "SINTERED" IN A COMPACT MASS, WHICH IS THEN CUT TO EXAM. THE REDISTRIBUTION OF VARIOUS COLORS AS A RESULT OF MIXING DURING THE FLUIDIZATION. EXPTS. WITH 220 MU PARTICLES IN A COLUMN 50 MM IN DIAM. SHOWED THE CURRENTS IN THE CENTER OF THE FLUIDIZED BED EXPAND TO THE ENTIRE LAYER, THE CURRENTS ARE RATHER UNSTABLE, AND THE MOTION IN THE UPPER PART IS THE MOST INTENSIVE; A DOWNWARD MOTION TAKES PLACE NEAR THE WALLS, AND "STAGNANT" REGIONS EXIST NEAR THE PERFORATED GRID. THERE ARE TYPICAL MAX. IN FLOW RATE AND EDDIES AT THE BOUNDARIES BETWEEN UPWARD AND DOWNWARD CURRENTS.

UNCLASSIFIED

1/2 050

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EFFECT OF THE VELOCITY OF MOTION OF AN OXIDIZING MEDIUM ON THE  
IGNITION OF HEATPROOF AND HEAT RESISTANT STEELS AND ALLOYS -U-  
AUTHOR--(03)-NESGOVOROV, L.YA., PROZOROV, YU.A., KHOLIN, V.G.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA, SERIYA FIZICHESKIKH I TEKHNIЧЕСKIKH NAUK, NO. 1, 1970,  
P. 95-101  
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--HEAT RESISTANT STEEL, ALLOY DESIGNATION, OXYGEN, IGNITION, GAS  
FLOW/(U)EIAIT HEAT RESISTANT STEEL, (U)E1445P NICKEL BASE ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1997/0024

STEP NO--UR/0371/70/000/001/0095/0101

CIRC ACCESSION NO--AP0119020

UNCLASSIFIED

2/2 050

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119020

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF THE EFFECT OF THE VELOCITY OF MOTION OF OXYGEN AT VARIOUS PRESSURES ON THE IGNITION OF HEATPROOF AND HEAT RESISTANT STEELS AND ALLOYS. AN ESTIMATE IS MADE OF THE RESISTANCE TO IGNITION OF EIALT STEEL AND EI445P ALLOY DURING HIGH TEMPERATURE TESTS IN THE PRESENCE OF AN OXYGEN FLOW AND IN A STATIONARY OXYGEN MEDIUM. THE MINIMUM IGNITION TEMPERATURE OF SAMPLES EXPOSED TO AN OXYGEN FLOW IS FOUND TO BE CONSIDERABLE LESS THAN THAT OF SAMPLES IN A STATIONARY OXYGEN MEDIUM. FACILITY: AKADEMIJA NAUK LATVIISKOI SSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--PRIMARY STAGES OF VISCOSE FIBER FORMATION -U-  
AUTHOR--(104)-UKHANDVA, Z.V., PROZOROVA, G.YE., ANTIPOVA, R.V., PAPKOV, S.P.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. VOLOKNA 1970, (1), 32-4  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--RAYON, ELONGATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1984/1824 STEP NO--UR/0183/70/000/001/0032/0034  
CIRC ACCESSION NO--AP0100398  
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100398

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORCED SYNERESIS OF RAYON (I) FIBERS (U., ET. AL., 1968) FORMED IN PPTN. BATHS CONTG. H SUB2 SO SUB4 80, NA SUB2 SO SUB4 120, AND ZNSO SUB4 0-150 G-L. WAS STUDIED. MAX. FORCED SYNERESIS RATE WAS REACHED WHEN THE STRETCHING RATIO WAS 1.25-1.6 (DEPENDING ON BATH COMPN.). THE TOTAL AMT. OF H SUB2 O SEPD. FROM THE FIBERS DUE TO NATURAL SYNERESIS WAS CONST. THE STRENGTH OF THE I YARN FORMED DURING ORIENTATIONAL ELONGATION WAS ESSENTIALLY INDEPENDENT OF THE COMPN. OF THE BATH. THUS, THE PRIMARY STAGES OF FORMATION OF I YARN PREVIOUSLY DISCUSSED WERE IN AGREEMENT WITH THE EXPTL. DATA.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--INVESTIGATION OF THE HIGH FREQUENCY ANTIFERROMAGNETIC RESONANCE  
BRANCH IN CSMNF SUB3 -U-  
AUTHOR-(03)-BOROVIKROMANOV, A.S., KOTYUZHANSKIY, B.YA., PROZOROVA, L.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,  
NR 6, PP 1911-1918  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--CESIUM COMPOUND, MANGANESE COMPOUND, FLUORIDE, CRYSTAL  
SYMMETRY, ANTIFERROMAGNETIC MATERIAL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/2229 STEP NO--UR/0056/70/058/006/1911/1918  
CIRC ACCESSION NO--AP0125807  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0125807

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A HIGH FREQUENCY AFMR BRANCH IS FOUND IN THE HEXAGONAL ANTIFERROMAGNETIC SUBSTANCE GSMNF SUB3 AND THE GAP OF THE BRANCH IS DETERMINED. THE TEMPERATURE DEPENDENCE OF THE GAP IS STUDIED AND IT IS SHOWN THAT AT HIGH TEMPERATURES IT CAN BE DESCRIBED BY THE BRILLOUIN FUNCTION. THE DEPENDENCE OF THE AFMR LINE SHAPE ON TEMPERATURE IS INVESTIGATED. THE AFMR SPECTRUM FOR GSNMF SUB3 IS CALCULATED ON BASIS OF THE EXPRESSION FOR A THERMODYNAMIC POTENTIAL SATISFYING THE CRYSTAL SYMMETRY.

FACILITY: INSTITUT

FIZICHESKIKH PROBLEM, AN SSSR.

UNCLASSIFIED



USSR

UDC 539.12

1

AZIMOV, S. A., GULYAMOV, U. G., GULYAMOV, K. G., PROZOROVA, YE. I., and CHERNOV, G. M., Institute of Nuclear Physics, Academy of Sciences Uzbek SSR

"Diffraction Coherent Particle Production in Interactions of 17 Gev Pions With Emulsion Nuclei"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh Nauk, No 5, 1971, pp 70-75

**Abstract:** The article presents experimental data on inelastic coherent particle production reactions in collisions of 17.2-GeV pi-mesons with photoemulsion nuclei, based on extensive statistical material obtained with the aid of angular screening tests devised by the authors. Three-pronged and five-pronged interactions with a zero number of heavily ionizing particles were screened for measurements. The mean free path in the photoemulsion was found to be  $53^{+7}_{-5}$  m for three-pronged coherent reactions,  $3.8^{+11.5}_{-1.6}$  km for five-pronged events. The azimuthal angular distribution in coherent particle production reactions was studied.

1/1

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USSR

UDC 612.273+612.018

SIMANOVSKIY, L. N., KRASNOVSKAYA, I. A., PROZOROVSKAYA, M. P., and TAVROVSKAYA, T. V., Laboratory for the Study of the Resistance of the Organism, Laboratory of Endocrinology, and Laboratory of the Development of Adaptive-Trophic Functions of the Nervous System, Institute of Evolutionary Physiology and Biochemistry imeni I. N. Sechenov, Academy of Sciences USSR, Leningrad

"Changes in the Neuroendocrine System in White Rats During Adaptation to Hypoxia"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 828-836

Abstract: Tests were performed on rats exposed (in a barochamber) to a simulated altitude of 2,000 to 7,600 m for up to 3 months. Groups of animals were sacrificed at intervals and tissue samples collected for analysis. Morphological changes concerning cytoplasm, nuclei, and vascularization proceeded in two phases, giving rise to corresponding functional alterations. In the initial days of hypoxia, a certain activation of the hypothalamic-neurohypophyseal system (HNHS), adenohypophysis, and the thyroid gland was observed. From the 14-20th day on, synthesis of HNHS hormones was reduced, though these hormones were readily released from the neurohypophysis into blood. Similarly,

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USSR

SIMANOVSKIY, L. N., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 828-836

from the 30th to the 90th day, production of the TSH in the adenohypophysis and the activity of the thyroid gland progressively decreased. On the other hand, concentration of catecholamines and insulin in blood plasma and utilization of these hormones in tissues were increased throughout the duration of the hypoxia. The concluding paragraph states that the observed changes are significant and will be discussed in a separate article.

2/2

- 34 -

1/2 021 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--ZIRCONIUM AND HAFNIUM P, AMINO BENZOATES -U-  
AUTHOR-(03)-SMIRNOV, V.A., PROZOROVSKAYA, Z.N., KOMISSAROVA, L.N.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1266-70  
DATE PUBLISHED-----70  
SUBJECT AREAS---CHEMISTRY  
TOPIC TAGS--ZIRCONIUM COMPOUND, HAFNIUM COMPOUND, AMINE, BENZOIC ACID,  
CHEMICAL SYNTHESIS, THERMAL STABILITY, THERMAL ANALYSIS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3007/0716 STEP NO--UR/0078/70/015/005/1266/1270  
CIRC ACCESSION NO--AP0136155  
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136155

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZRL SUB4 AND HFL SUB4, WHERE HL  
EQUALS P, AMINOBENZOIC ACID, WERE SYNTHESIZED AND THEIR THERMAL STABILITY  
WAS DETO. BY DTA AND THERMOGRAVIMETRY. A SCHEME IS PROPOSED FOR THEIR  
DECOMP. AND KINETIC PARAMETERS OF THE INITIAL STEP OF THE DECOMP. ARE  
GIVEN. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: **AP0055938** - Abstracting Service:  
CHEMICAL ABST. 6-70

Ref. Code:

**480038**

117288c Zirconium and hafnium nitrobenzoates. Smirnov, V. A.; Prozorovskaya, Z. N.; Komissarova, L. N. (Mosk. Gos. Univ., Moscow, USSR). *Zh. Neorg. Khim.* 1970, 15(2), 341-6 (Russ). Acetylacetonato complexes of Zr or Hf react with *p*- or *o*-nitrobenzoic acid to give  $M(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  (I) ( $M = \text{Zr}$  or  $\text{Hf}$ ) or  $\text{Zr}_2\text{O}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  and  $\text{Hf}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$ , resp. The compds. were studied by DTA and thermogravimetry.  $\text{Zr}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  and  $\text{Zr}_2\text{O}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  decomp. thermally to  $\text{Zr}_2\text{O}(C_7\text{H}_4\text{O}_2\text{N})_6$ ,  $\text{Zr}_4\text{O}_3(C_7\text{H}_4\text{O}_2\text{N})_6$ , and  $\text{ZrO}_2$ , and  $\text{Zr}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  forms  $\text{ZrO}(C_7\text{H}_4\text{O}_2\text{N})_2$  in addn. to the mentioned compds. Analogously  $\text{Hf}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  and  $\text{Hf}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  decomp. to  $\text{Hf}_2\text{O}(C_7\text{H}_4\text{O}_2\text{N})_6$ ,  $\text{Hf}_4\text{O}_3(C_7\text{H}_4\text{O}_2\text{N})_6$ , and  $\text{HfO}_2$  and  $\text{Hf}(p\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  forms  $\text{Hf}_2\text{O}(C_7\text{H}_4\text{O}_2\text{N})_6$  in addn. to the mentioned compds. Activation energies of thermal decompn. of I were  $\sim 20\text{--}1$  kcal/mole and of  $\text{M}_2\text{O}(o\text{-C}_6\text{H}_4\text{O}_2\text{N})_4$  were 41 and 46 kcal/mole for  $M = \text{Zr}$  and  $\text{Hf}$ , resp.

BMJR

pc

7

REEL/FRAME  
19841267

Acc. Nr.

AP0055937

Abstracting Service:  
CHEMICAL ABST. 6/70

Ref. Code

4R 0058

117254p Properties of zirconium and hafnium oxypropionates.  
Prozorovskaya, L. N.; Komissarova, L. N.; Shestakova, T. V.  
(USSR). Zh. Neorg. Khim. 1970, 15(2), 335-40 (Russ).  
Products of thermal decompn. of  $\text{MO}(\text{EtCO}_2)_2 \cdot \text{H}_2\text{O}$  ( $\text{M} = \text{Zr}$  or  
Hf) were, at 50-130°,  $\text{MO}(\text{EtCO}_2)_2 \cdot 0.5\text{H}_2\text{O}$ ; at 150-250°,  
 $\text{M}_2\text{O}_3(\text{Et}_2\text{CO}_2)_2$ ; and, at 400-500°,  $\text{MO}_3$ ; analyses are given.  
Intermediate products of the decompn. did not contain the M:O  
group (ir spectra). Diagrams of isothermal soly. of  $\text{MO}(\text{Et}-$   
 $\text{CO}_2)_2 \cdot \text{H}_2\text{O}$  in  $\text{EtCO}_2\text{H}$  were constructed and the compns. of liq.  
and solid phases are tabulated. The compn. of the solid phase  
( $\text{MO}(\text{EtCO}_2)_2 \cdot \text{H}_2\text{O}$ ) in the 10-100 wt. % propionic acid range  
remained unchanged.

HMJR

REEL/FRAME  
19841266

P.N.

USSR

UDC 621.396.6.002:621.793

PROZOROVSKIY, B. S., IVLPEV, N. N.

"Determining the Moisture Resistance of Materials and Protective Coatings by the Method of Localized Wetting"

Elektron. tekhnika. Nauchno-tekhn. sb. Materialy (Electronic Technology. Scientific and Technical Collection. Materials), 1970, vyp. 3, pp 58-62 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V313)

Translation: The moisture resistance of materials and protective polymer coatings is determined and experimentally checked by the method of localized wetting. The basic advantage of the method is that only a part rather than the entire surface of materials and coatings is moistened. It is shown that the reliability of test results can be improved by using the method of localized wetting.

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UZJ

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--A STUDY OF THE ANTIMYORELAXANT EFFECT OF CHOLINOPOTENTIATING AGENTS  
-U-

AUTHOR--(04)--PRCZUROVSKIY, V.B., VLADEYEVA, N.V., KHROMOVA, O.N.,  
DUBOVITSKAYA, S.I.

COUNTRY OF INFO--USSR

SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 49,  
NR 6, PP 51-54

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MUSCLE RELAXANT, INHIBITION, CHOLINESTERASE, BRAIN, MUSCLE  
PHYSIOLOGY

CENTREL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0703

STEP NO--UR/0219/70/049/006/0051/0054

CIRC ACCESSION NO--APC131302

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0131302

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANTICURARE AND ANTIPARALYTIC EFFECT OF CHOLINOPOTENTIATING AGENTS (ARMINE, GALANTAMINE, OXASYL, PROSERINE, PHOSPHACOL, ESERINE) WAS STUDIED IN EXPERIMENTS ON FROGS AND RATS. THE ANTIMYORELAXANT ACTIVITY DID NOT CORRELATE WITH ANTICHOLINESTERASE TO TOTAL CHOLINESTERASE OF FROG MUSCLES AND ACETYLCHOLINESTERASE OF RAT BRAIN. THE MARKEDNESS OF ANTIPARALYTIC ACTIVITY OF PREPARATIONS IN EXPERIMENTS ON RATS DOES NOT CORRESPOND WITH DIAPHRAGMATIC CHOLINESTERASE INHIBITION CAUSED BY THEM. ANTIMYORELAXANT ACTIVITY IN EXPERIMENTS ON FROGS CLOSELY CORRELATE WITH THE ABILITY OF PREPARATIONS TO SENSITIZE FROG MUSCULAR ABDOMINIS RECTIS TO ACETYLCHOLINE. A CONCLUSION IS MADE THAT ANTICURARE AND, PARTICULARLY, ANTIPARALYTIC EFFECTS OF CHOLINOPOTENTIATING AGENTS DEPEND NOT ONLY ON CHOLINESTERASE INHIBITION, BUT ALSO UPON THE CHOLINSENSITIZING ACTION.

FACILITY: LENINGRAD PEDIATRIC MEDICAL INSTITUTE.

UNCLASSIFIED

USSR

UDO 621.52:539.23:621.317.343.2(088.6)

SEMENTSCV, V.I., PROZOROVSKIY, V.YE. [Taranog. Radio Engineering Institute]

"Device For Measurement Of Electrical Conductivity Of Thin Films"

USSR Author's Certificate No 322729, filed 5 May 70, published 9 Feb 72 (from  
RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7A89P)

Translation: The geometry of the transducer [datchik] is selected so that the voltage at the terminals of the voltmeter is equal to zero if the measurable conductivity is equal to a specific magnitude selected beforehand. With a change of the conductivity, the voltmeter registers a voltage which provides a measure of the measurable conductivity. The proposed device is of simple construction. Supplementary outputs from the vacuum chamber are not required for its operation because the transducer is made in the form of two inductively connected circuits [kontur] connected to a generator and voltmeter, respectively, and located outside the vacuum chamber and connected with a third loop placed in the vacuum chamber with the film under inspection. A.F.

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UDC 621.762.001

USSR

SLEPTSOV, V. M., SHCHEGOLEV, G. M., KUKOTA, YU. P., and PRSHEDROMIRSKAYA, YE. M.

"Decreasing the Erosive Wear of Refractory Joints in Plasma Fluxes by Means of Thermochemical Protection"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- Collection of Works), Kiev, "Nauk. Dumka," 1970, pp 231-233 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G372 by authors)

Translation: The article considers the effectiveness of using thermochemical protection to decrease corrosive and erosive wear of refractory joints in high-temperature fluxes. The technology of producing porous materials is described. A device has been created for testing the resistance of materials in plasma fluxes. The authors present profiles of the concentration above the porous channel wall during the injection of carbon dioxide into the air-stream. Two illustrations.

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Acc. No. **0043733**

Abstracting Service: **5/70**  
INTERNAT. AEROSPACE ABST.

Ref. Code:  
**U0226**

A70-23123 # Soldering of the boron carbonitride with high  
melting point metals (Paika karbonitrida, bora i tugoplavkimi  
metallami). G. G. Archakova, A. L. Burykina, O. V. Evtushenko, and  
E. M. Prshedromirskaja (Akademiia Nauk Ukrainsskoi Institut  
Problemy Materialovedeniia, Kiev, Ukrainian SSR, Poroshkovaia  
Metallurgiiia, vol. 10, Jan. 1970, p. 52-55. In Russian.

Development of a high-temperature soldering technique for  
soldering the boron carbonitride with the niobium, molybdenum and  
tungsten, using the molybdenum disilicide as a solder. A study is  
made of the electrical resistance and gas tightness up to 10 atm of  
this soldered joints.  
Z.W.

ALS

REEL/FRA  
**19770139**

USSR

ARCHAKOVA, G. G., BURYKINA, A. L., YEVTUSHENKO, O. V., and PRSEEDROMIRSKAYA, YE. M., Institute for Problems of Material Science, Academy of Sciences USSR

"Soldering of Carbonitride With Refractory Metals"

Kiev, Academy of Sciences Ukr SSR, Poroshkovaya Metallurgiya, No 1, Jan '70, pp 52-55

Abstract: A method was developed for boron carbonitride soldering with refractory metals (niobium, molybdenum, and tungsten) using molybdenum disilicide as a refractory solder. In contrast to a previously developed soldering technique in an induction furnace in an argon medium, the soldering was accomplished in a vacuum. In certain cases a molybdenum powder (5 to 7%) was added to the refractory solder in order to decrease the temperature. A schematic diagram of the soldering setup is given and the soldering technique is described. Microstructure photographs of different fusion samples are given, and data on the electrical resistance of soldered boron carbonitrides with three metals are presented. The gas permeability of samples with pressure drops up to 10 atm was investigated. The experimental setup is shown schematically. The results obtained show that the soldering technique ensures the conservation of the electric resistance of

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USSR

ARCHAKOVA, G. G., et al, Poroshkovaya Metallurgiya, No 1, Jan 70, pp 52-55

soldered elements within the limits of  $10^{13}$  ohm/cm and a gas density of the  
soldered elements from 1 to 10 atm. Orig. art. has: 3 figures, 2 tables, and  
2 references.

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USSR

UDC: 681.325.5

TIMOFEYEV, B. B., SUKHOMLINOV, M. M., PERENETS, N. K., STEPKO, D. P.,  
NIKITENKO, V. M., OVERKO, V. A., PRSHISOVSKAYA, T. A., LYFAR', I. N.

"A Specialized Digital Computer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrantsy, Tovarnyye Znaki,  
No 47, Dec 73, Author's Certificate No 408304, Division G, filed 23 Jun 70,  
published 10 Dec 73, p 172

Translation: This Author's Certificate introduces a specialized digital computer which contains registers, counters, and a control module connected to the registers and to the overflow outputs of the counters. The device also contains adders, flip-flops, an auxiliary code formation module, coincidence gates, buffer circuits, and a cadence pulse circuit connected to the input of a circuit for obtaining digit potentials. The outputs of this circuit are connected to the inputs of the control module. As a distinguishing feature of the patent, the functional possibilities of the computer are extended by adding a circuit for isolating transition signals, a transition counter, and three auxiliary registers. The output of the transition counter is connected to the first input of the first adder,

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(9)

USSR

TIMOFEEV, B. B., et al., USSR Author's Certificate No 408304

whose output is connected to the input of the transition counter. The output of the first auxiliary register is connected to its input through the first coincidence gate, while the outputs of the second and third registers are connected through the second and third coincidence gates to the first inputs of the second and third adders whose outputs are connected to the inputs of the second and third registers respectively. The output of the second adder is connected through the fourth coincidence gate to the first input of the first buffer circuit. The second input of this buffer circuit is connected to the output of the first register, and the output of the buffer circuit is connected to the first input of the circuit for isolating transition signals. The second input of this circuit is connected to the output of the transition counter and, through the fifth and sixth coincidence gates, to the first inputs of the second and third buffer circuits. The outputs of these buffer circuits are connected to the second and third inputs, whose outputs are connected to the second inputs of the second and third adders respectively. The output of the circuits for isolating transition signals is connected through the seventh and eighth coincidence gates to the second inputs of the second and third buffer circuits respectively and, through the ninth coincidence gate,

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USSR

TIMOFEYEV, B. B., et al., USSR Author's Certificate No 408304

to the input of the auxiliary code formation module whose output is connected to the third input of the second buffer circuit. The output of the third register is connected through the tenth coincidence gate to the set input of the flip-flop whose output is connected through the eleventh coincidence gate to the second input of the first adder.

3/3

USSR

P  
UDC 614.449.57:615.285.7

LINEVA, V. A., PRSHIVORA, M., LEVIYEV, P. YA., OKULOV, V. P.,  
GADZHIZALOV, D., SANINA, M. M., SAGATELOVA, I. S., and OBCELENSKAYA,  
L. F.  
"Trails of the Czechoslovak Insecticide ES-50 Metathion in the USSR.  
I. ES-50 Metathion Used to Control the Housefly"  
Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2,  
1970, pp 211-220

Abstract: ES-50 metathion, an organophosphorus compound derived from phenitrothion O, O-dimethyl (O-3-methyl-4-nitrophenyl) thio-phosphate, was developed and tested in Czechoslovakia where it demonstrated a broad spectrum of action against flies, cockroaches, ticks, and crop pests. It has low toxicity for warm-blooded animals and no cumulative effect. Laboratory and field tests of the insecticide in five different climatic regions of the Soviet Union showed that it is highly effective in a dose of 2 g/m<sup>2</sup> of treated surface for 30-60 days. The temperature and humidity are the most important factors in the action of metathion. The higher the temperature and  
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USSR

LINEVA, V. A., et al., Moscow, Meditsinskaya Parazitologiya i Parazitarnyye Bolezni, No 2, 1970, pp 211-220

humidity, the more toxic its effect. Increasing the humidity of the room or moistening the treated surfaces increases metathion's potency, especially on glass or wood. Among the negative features: (i) it has an unpleasant odor; (ii) it leaves marks on the treated surfaces; (iii) flies seem to develop resistance to it fairly quickly.

2/2

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UNCLASSIFIED  
P  
TITLE--AIMEL ASPIRATION GASTROBIOPSY OF THE ANTRAL REGION OF THE STOMACH  
-U-  
AUTHOR--PRUCHANSKIY, V.S.  
COUNTRY OF INFO--USSR  
SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 2, PP 122-126  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--BIOPSY, GASTROENTEROLOGY  
CENTRAL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PRECY REEL/FRA--1977/1699  
STEP NC--UR/C497/70/048/002/0122/0126  
GIRC ACCESSION NC--AP0044844  
UNCLASSIFIED

16  
5  
21

Acc. Nr: A P0044844

Ref. Code:

UR 04497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,  
Nr 2, pp 122-126

AIMED ASPIRATION GASTROBIOPSY OF THE ANTRAL REGION  
OF THE STOMACH

Pruchanskiy, V. S.

Summary

The article is concerned with the technique of aspiration biopsy of the antral region of the stomach. Biopsy was effected under roentgenoscopic control in supine position of the patient. A total of 50 patients suffering from chronic gastritis were examined. Eight patients were subjected to simultaneous biopsy of the antral region and body of the stomach. A coincidence of the histological picture was noted only in one case. In the other seven cases changes in the mucous membrane were more marked in the antral region. The author emphasizes the importance of gastrobiopsy of the antral region in the diagnosis of chronic gastritis and in evaluation of the severity of the disease.

REEL/FRA  
19771699

DI 02

1/2 016  
UNCLASSIFIED  
TITLE--REACTIONS OF THE KETONE GROUP OF ETHYL PENTAFLUOROBENZOYLACETATE  
-U-  
AUTHOR--(02)--PRUDCHENKO, A.T., BARKHASH, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 727-31  
DATE PUBLISHED--70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--KETONE, FLUORINATED ORGANIC COMPOUND, BENZENE DERIVATIVE,  
ACETATE, AMINE, ORGANIC AZOLE COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--2000/1965  
CIRC ACCESSION NO--AP0125554  
STEP NO--UR/0366/70/006/004/0127/0131  
UNCLASSIFIED

2/2 016  
 CIRC ACCESSION NO--AP0125554 UNCLASSIFIED  
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF H SUB2 NCSNHNH  
 SUB2 .HCL WITH C SUB6 F SUB5 COCH SUB2 CO SUB2 ET (I) AT 200DEGREES GAVE  
 C SUB6 F SUB5 C(:NNHCSNH SUB2)CH SUB2 CO SUB2 ET, WHICH ON REFLUXING  
 WITH HCL, ETOH, WATER MIXT. GAVE C SUB6 F SUB5 CME:NNHCSNH SUB2 (II).  
 HEATING I WITH H SUB2 NCSNHNH SUB2 (III) GAVE DIRECTLY II. ALSO THE  
 CLEAVAGE OF I WITH AQ. ETOH GAVE C SUB6 F SUB5 COME WHICH WAS CONDENSED  
 WITH III TO GIVE II. THE REACTION OF I WITH H SUB2 NCONHNH SUB2 HCL  
 GAVE C SUB6 F SUB5 C(:NNHCONH SUB2)CH SUB2 CO SUB2 ET WHICH ON HEATING  
 IN ETOH, HCL, WATER MIXT. GAVE C SUB6 F SUB5 C(:NNHCONH SUB2)ME AND  
 3, PENTAFLUOROPHENYL, 5, PYRAZOLONE. AT ROOM TEMP. I REACTED WITH NH SUB2  
 OH. HCL TO GIVE C SUB6 F SUB5 C(:NOH)ME AND  
 3, PENTAFLUOROPHENYL, 5, ISOXAZOLONE.  
 ORG. KHIM., NOVOSIBIRSK, USSR. FACILITY: NOVOSIBIRSK. INST.

UNCLASSIFIED



1/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--PYRIDAZINE RING SIZE REDUCTION OF  
1,PHENYL,3,ETHOXYCARBONYL,5,6,7,8,TETRAFLUORO,4,1H,CINNOLINONE -U-  
AUTHOR--(02)-PRUDCHENKO, A.T., KOZLOVA, L.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 680-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

OPIC TAGS--FLUORINATED ORGANIC COMPOUND, HETEROCYCLIC NITROGEN COMPOUND,  
ZINC, INDOLE, CARBOXYL RADICAL, CHEMICAL REDUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
ROXY REEL/FRAME--2000/0937

STEP NO--UR/0079/70/040/003/0680/0682

IRC ACCESSION NO--APG124597

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--23OCT70

IRC ACCESSION NO--AP0124597

BSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. HEATING THE TITLE COMPD. (I) WITH  
ZN DUST IN ACOH TRACE HCL 1.5 HR GAVE 48PERCENT ET  
1-PHENYL-3-HYDROXY-4,5,6,7-TETRAFLUOROINDOLE 2-CARBOXYLATE (II), M.  
135-6DEGREES, WHICH WITH AC SUB2 O-KOAC 4 HR GAVE 62PERCENT 3-ACETOXY  
ANALOG, M. 94.5-6DEGREES, WHILE REDN. OF II WITH NAGH SUB4-MEDH 24 HR  
GAVE ME 1-PHENYL-3-HYDROXY-4,5,6,7-TETRAFLUOROINDOLE-2-CARBOXYLATE, M.  
186-8DEGREES. FACILITY: NOVOSIBIRSK. INST. ORG. KHIM.,  
NOVOSIBIRSK, USSR.

UNCLASSIFIED

USSR

UDC 632.95

FOKIN, YE. P., and PRUDCHENKO, YE. P.

"Method of Producing 3,6-Dioxy-2,4,5-trichlorophenylacetic Acid"

USSR Authors' Certificate 250901, filed 21/09/68, published 20/01/70,  
(from Referativnyy Zhurnal Khimii, No 16 (II), 25 Aug 70, Abstract  
No 16 N740 by I. A. Mel'nikov)

Translation: 3,6-dioxy-2,4,5-trichlorophenylacetic acid (I), an active herbicide, is produced from 2-(N-dimethylaminovinyl)-3,5,6-trichlorobenzoquinone (II) by treating it with concentrated HCl (acid). 2 g I in 140 ml concentrated HCl is boiled 30-40 min, the solution is filtered, separating 1.5 g I from the mother liquor with cooling, yield 75%, m.p. 207-80° (from water). By boiling 1 g I in MeOH, saturated with dry HCl (gas), 0.8 g ME I is produced, yield 72%, m.p. 123-4° (from CCl<sub>4</sub>); by heating 1 g I at 203-210°, 0.9 g  $\gamma$ -lactone I (III) is produced, yield 96%, m.p. 234-5° (from alcohol); by treating 0.5 g III with Ac<sub>2</sub>O, 0.52 g III acetate is produced, yield 89%, m.p. 203-40° (from CHCl<sub>3</sub>). Oxidation of 1 g I using FeCl<sub>3</sub> synthesizes 0.3 g 2,4,5-trichloro-3,6-quinonylacetic acid (IV), yield 81%, m.p. 168-71°, ME IV is produced in a method similar to that described above, yield 40%.

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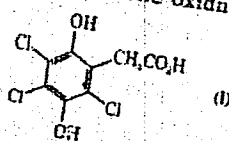
Acc. Nr.

AP0041535

Abstracting Service:  
CHEMICAL ABST **D** 4/70

Ref. Code  
UR0366

89978g N,N - Dialkylaminovinylquinones. 1. Transforma-  
tion of 2-[2-(dimethylamino)vinyl]-3,5,6-trichlorobenzoquinone  
into 2-carboxymethyl-3,5,6-trichlorohydroquinone under the in-  
fluence of hydrochloric acid. Fokin, E. P.; Fudchenko, E. P.  
(Novosibirsk. Inst. Org. Khim.; Novosibirsk, U.S.S.R.). *Zh. Org.  
Khim.* 1970, 6(1), 41-3 (Russ.). Heating 2-[2-(dimethylamino)-  
vinyl]-3,5,6-trichlorobenzoquinone in concd. HCl soln. gave  
2-carboxymethyl-3,5,6-trichlorohydroquinone (I) instead of the  
expected 3,5,6-trichlorobenzoquinone-2-acetaldehyde (Dzh.  
Shmushkovich, 1966). The esterification of I with MeOH satd.  
with HCl gave its Me ester. The oxidn. of I with FeCl<sub>3</sub> gave



3,5,6-trichlorobenzoquinone-2-acetic acid, which was converted  
to the Me ester. Heating I above the m.p. (~210°) gave 4,6,7-  
trichloro-5-hydroxycoumarone which was acetylated to its  
5-acetoxy analog.

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19751403

Acc. Nr:

AP0047161

Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhatrii, 1970,  
Vol 70, Nr 2, pp 176-179,

THE ROLE OF SPINAL PHLEBOGRAPHY IN THE DIFFERENTIAL  
DIAGNOSIS OF SACRO-LUMBAR PAIN SYNDROMES

E. A. Prudenskiy

The paper deals with the results of a spinal phlebography conducted in 52 patients. In 30 of the investigated patients there was an osteochondrosis of the spine with expressed radical pain syndromes, in 16 — inflammatory processes (cauditis, meningoradiculitis) and in 6 cases — a varicosis of the spinal veins. It was possible to eliminate for each group the characteristic changes in the system of spinal venous plexuses. The author shows that there is a certain dependency between the character of phlebographic changes and the intensity of radical pain syndromes, as well as with the degree of spinal disorders. It is being stressed that this method is especially valuable for the diagnostics of spinal pathology, such as varicosis of the spinal veins which is a rare clinical diagnosis.

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GUN, G. Ya., POLUKHIN, P. I., YAKOVLEV, V. I., GOLOVINOV, M. F., PRUDKAVSKIY,  
B. A., KORSETSKIY, G. M., RYZHOV, A. F., and BRUNILIN, A. I.

UDC 621.777.07

"Optimal Die Designing for Pressing Aluminum Alloys"

Plasticheskaya Deformatsiya Metallov i Splavov, Moscow, No 64, "Metallurgiya,"  
1970, pp 139-199

Translation: Questions of optimal die designing are considered using a  
computer. On the basis of statistical processing of a number of existing  
dies and theoretical and experimental research, a method is proposed for  
calculating the working belts and location of the center of gravity of a  
section on the die. Five figures and three tables.

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USSR

UDC: 621.317.44

PRUDKIY, V. P., ADAMCHUK, A. A., STETSENKO, O. A., GORDIYENKO, Yu. N.  
"An Instrument for Measuring the Parameters of Magnetodielectrics"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Re-  
ports of the All-Union Scientific and Technical Conference on Radio Engineer-  
ing Measurements. Vol. 1), Novosibirsk, 1970, pp 146-147 (from RZh-Radiotekh-  
nika, No 12, Dec 70, Abstract No 12A361)

Translation: The authors describe a highly sensitive measurement instal-  
lation based on a traveling-wave resonator with the use of a loss compen-  
sation device to increase sensitivity. This device is an asymmetric balance  
circuit with an amplifying element connected in one of its arms. The sen-  
sitivity limit of the installation is determined by the gain stability of  
the amplifier and the transmission factor of the ring-shaped circuit line.  
Data are given on the Q of the resonator and the sensitivity of the circuit.  
One illustration, bibliography of two titles. N. S.

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USSR

UDC 534.642

PRUDNIKOV, A. S., and CHERNYSHEV, K. V., Moscow State University  
"Investigation of Acoustic Multiterminal Networks"  
Moscow, Akusticheskiy Zhurnal, Vol 17, No 4, 1971, pp 593-598

Abstract : Results are presented of investigations of a certain class of acoustic systems by making use of the conception of multiterminal networks. Properties of such systems are completely determined by one of interrelated matrices, characteristic and impedance. A relation is derived combining input and output impedances of a multiterminal network system. This relation can be used, e.g. for experimental matrix determination of impedances. The experimental investigation was carried out in the most simple case of a four-pole system. The problem of the effect of the apparent mass on the accuracy of results and also the possibility of model investigation of multiterminal network systems are discussed. The derived results can be used for the investigation of acoustic waveguide systems and also in designing active and reactive noise suppressors. Seven illustr., ten formulas, five biblio. refs.

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PRUDNIKOV, G. G.

UDC 53.088:528.06

"Causes for the Inaccuracy of Operational Geodetic Surveying"

Moscow, Promyshlennoye Stroitel'stvo, No 1, 1973, pp 43-44

Abstract: Consideration is given to the influence of various factors upon the accuracy of operational geodetic surveying, conducted by the method of side leveling, for checking the erection of building frames from prefabricated components. An analysis of errors influencing the accuracy of measurements by this method shows that the principal ones originate in read-off errors, correspondence of the rod zero with the axial reference line of the structure, and nonperpendicularity of the rod to the surveying range. Recommendations are given for decreasing the total value of the error.

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UDC: 632.384.66

BORISOV, D. G., GRYZLOV, A. I., PRUDNIKOV, I. A., EMIROV, E. Kh.

"A Method of Modulating the Energy of a Flow of Charged Particles"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,  
No 10, Apr 71, Author's Certificate No 270918, Division H, filed 4 Dec 68,  
published 11 Mar 71, p 238

Translation: This Author's Certificate introduces a method of modulating the energy of a flow of charged particles by sending particles grouped into bunches and accelerated to relativistic energy through an iris traveling-wave waveguide. As a distinguishing feature of the patent, the method is designed to produce a line spectrum in short time intervals. Electromagnetic oscillations are excited in the iris waveguide with a period which does not coincide with the prf of the relativistic bunches of accelerated charged particles.

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